

Amendment and Response

Applicant: Martin Brox

Serial No.: 10/585,151

Filed: October 16, 2007

Docket No.: Q601.131.101/2003P53957US

Title: VOLTAGE REGULATION SYSTEM

REMARKS

The following remarks are made in response to the Non-Final Office Action mailed October 15, 2009. Claims 10-29 were rejected. With this Response, claims 10, 19, and 21 have been amended. Claims 10-29 remain pending in the application and are presented for reconsideration and allowance.

Drawings

The Examiner objected to the drawings for Figure 1 not being designated by a legend such as --Prior Art--.

Figure 1 has been amended to include a Prior Art legend. Accordingly, Applicant submits that the above objection to the drawings should be withdrawn.

Claim Rejections under 35 U.S.C. § 102

The Examiner rejected claims 10-29 under 35 U.S.C. § 102(b) as being anticipated by Wilcox et al., U.S. Patent No. 5,731,731 ("Wilcox").

Applicant submits that Wilcox fails to teach or suggest the limitations recited by amended independent claim 10 including **a further device for generating a variable further voltage from the first voltage or a voltage derived from it, the variable further voltage tracking the first voltage.**

Wilcox discloses a switching regulator circuit 100, 300 that provides a regulated DC output voltage V_{out} 102 for driving a load. The regulator operates from an unregulated supply voltage V_{in} 104. (Col. 3, line 66 – col. 4, line 5). A PWM control circuit 120 is a current mode pulse-width-modulator circuit that controls the duty cycle of a driver 132 at high average load currents to regulate the current through an inductor 138 such that the output voltage V_{out} is equal to the desired regulator voltage. (Col. 4, lines 35-39). At low load currents, the control signal from PWM control circuit 120 controls the switching of MOSFET 335 to supply the necessary current to inductor 138. (Col. 7, lines 10-14).

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The Examiner submits that small switch driver 333, small MOSFET 335, control routing circuit 350, PWM control circuit 120, and output control circuit 340 provide the *further device* recited by claim 10. (Office Action, page 3). Small switch driver 333, small MOSFET 335, control routing circuit 350, PWM control circuit 120, and output control circuit 340 of Wilcox, however, merely provide an output voltage V_{out} that is equal to the desired regulator voltage. Small switch driver 333, small MOSFET 335, control routing circuit 350, PWM control circuit 120, and output control circuit 340 do not provide a variable voltage that tracks V_{in} . Therefore, Wilcox fails to teach or suggest *the variable further voltage tracking the first voltage* as recited by claim 10.

In view of the above, Applicant submits that the above rejection of independent claim 10 under 35 U.S.C. § 102(a) should be withdrawn. Dependent claims 11-18 further define patentably distinct independent claim 10. Accordingly, Applicant believes that these dependent claims are also allowable over the cited reference. Allowance of claims 10-18 is respectfully requested.

Further, Applicant submits that Wilcox also fails to teach or suggest the further limitations recited by dependent claim 11 including **wherein the further voltage generated by the further device can be higher than the voltage generated by the first device**. In Wilcox, driver 132 and MOSFET 134 (which the Examiner submits discloses the *first device*) provide the same output voltage V_{out} as small switch driver 333, small MOSFET 335, control routing circuit 350, PWM control circuit 120, and output control circuit 340 (which the Examiner submits discloses the *further device*). Since the output voltage V_{out} in Wilcox is constant, Wilcox fails to disclose wherein the further voltage generated by the further device *can be higher* than the voltage generated by the first device as recited by claim 11.

In addition, Applicant submits that Wilcox also fails to teach or suggest the further limitations recited by dependent claim 14 including **wherein the voltage generated by the first device or a voltage derived from it, and the further voltage generated by the further device, or a voltage derived from it, can be used for controlling a voltage regulation circuit device**. Wilcox does not disclose a *voltage regulation circuit device* controlled by the output of driver

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132 and MOSFET 134 (which the Examiner submits discloses the *first device*) and by the output of small switch driver 333, small MOSFET 335, control routing circuit 350, PWM control circuit 120, and output control circuit 340 (which the Examiner submits discloses the *further device*). The output of driver 132 and MOSFET 134 and of small switch driver 333, small MOSFET 335, control routing circuit 350, PWM control circuit 120, and output control circuit 340 is merely V_{out} .

Further, Applicant submits that Wilcox also fails to teach or suggest the further limitations recited by dependent claim 15 including **wherein the voltage generated by the first device or a voltage derived from it, and the further voltage generated by the further device, or a voltage derived from it, can be used as a reference voltage for the voltage regulation circuit device**. Wilcox does not disclose a *voltage regulation circuit device* and V_{out} does not provide a *reference voltage* for a voltage regulation circuit device. Rather, V_{out} is the voltage applied to the load 103.

In addition, Applicant submits that Wilcox also fails to teach or suggest the further limitations recited by dependent claim 17 including **wherein, in the activated state of the further device, the height of the level of the reference voltage used for the voltage regulation circuit device is determined by whichever of the voltages generated by the first and further device, or the voltages derived from them, exhibits the higher level**. Wilcox does not disclose a *voltage regulation circuit device*. In addition, driver 132 and MOSFET 134 (which the Examiner submits discloses the *first device*) and small switch driver 333, small MOSFET 335, control routing circuit 350, PWM control circuit 120, and output control circuit 340 (which the Examiner submits discloses the *further device*) are not active at the same time. Therefore, Wilcox does not disclose two voltages from which the one exhibiting the higher level can be used as the reference voltage for the voltage regulation circuit device.

For similar reasons as discussed above with reference to independent claim 10 and for additional reasons discussed below, Applicant submits that Wilcox also fails to teach or suggest the limitations recited by amended independent claim 19 including **generating a variable further voltage from the first voltage or a voltage derived from it, the variable further**

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voltage tracking the first voltage, wherein the further voltage can be higher than the constant voltage generated from the first voltage or the voltage derived from it.

In Wilcox, driver 132 and MOSFET 134 (which the Examiner submits discloses *generating an essentially constant voltage* as recited by claim 19) provide the same output voltage V_{out} as small switch driver 333, small MOSFET 335, control routing circuit 350, PWM control circuit 120, and output control circuit 340 (which the Examiner submits discloses *generating the further voltage* as recited by claim 19). Since the output voltage V_{out} in Wilcox is constant, Wilcox fails to disclose wherein the *further voltage can be higher than the constant voltage generated* from the first voltage or the voltage derived from it as recited by claim 19.

In view of the above, Applicant submits that the above rejection of independent claim 19 under 35 U.S.C. § 102(a) should be withdrawn. Dependent claim 20 further defines patentably distinct independent claim 19. Accordingly, Applicant believes that this dependent claim is also allowable over the cited reference. Allowance of claims 19 and 20 is respectfully requested.

For similar reasons as discussed above with reference to independent claim 10, Applicant submits that Wilcox also fails to teach or suggest the limitations recited by amended independent claim 21 including **means for generating a variable further voltage from the first voltage that tracks the first voltage.**

In view of the above, Applicant submits that the above rejection of independent claim 21 under 35 U.S.C. § 102(a) should be withdrawn. Dependent claims 22-29 further define patentably distinct independent claim 21. Accordingly, Applicant believes that these dependent claims are also allowable over the cited reference. Allowance of claims 21-29 is respectfully requested.

Further, for similar reasons as discussed above with reference to dependent claim 11, Applicant submits that Wilcox also fails to teach or suggest the further limitations recited by dependent claim 22 including **wherein the further voltage generated can be higher than the voltage generated by the first device.**

In addition, for similar reasons as discussed above with reference to dependent claim 14, Applicant submits that Wilcox also fails to teach or suggest the further limitations recited by

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dependent claim 25 including **wherein the voltage generated by the first device and the further voltage generated can be used for controlling a voltage regulation circuit device.**

Further, for similar reasons as discussed above with reference to dependent claim 15, Applicant submits that Wilcox also fails to teach or suggest the further limitations recited by dependent claim 26 including **wherein the voltage generated by the first device and the further voltage generated can be used as a reference voltage for the voltage regulation circuit device.**

In addition, for similar reasons as discussed above with reference to dependent claim 17, Applicant submits that Wilcox also fails to teach or suggest the further limitations recited by dependent claim 28 including **wherein, in the activated state of the further device, the height of the level of the reference voltage used for the voltage regulation circuit device is determined by whichever of the voltages generated by the first and further device exhibits the higher level.**

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CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 10-29 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 10-29 is respectfully requested.

No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Steven E. Dicke at Telephone No. (612) 573-2002, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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Date: November 25, 2009
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